A September SIE Projection from the VARCTIC, a Dynamic Statistical Model Inspired from Economics

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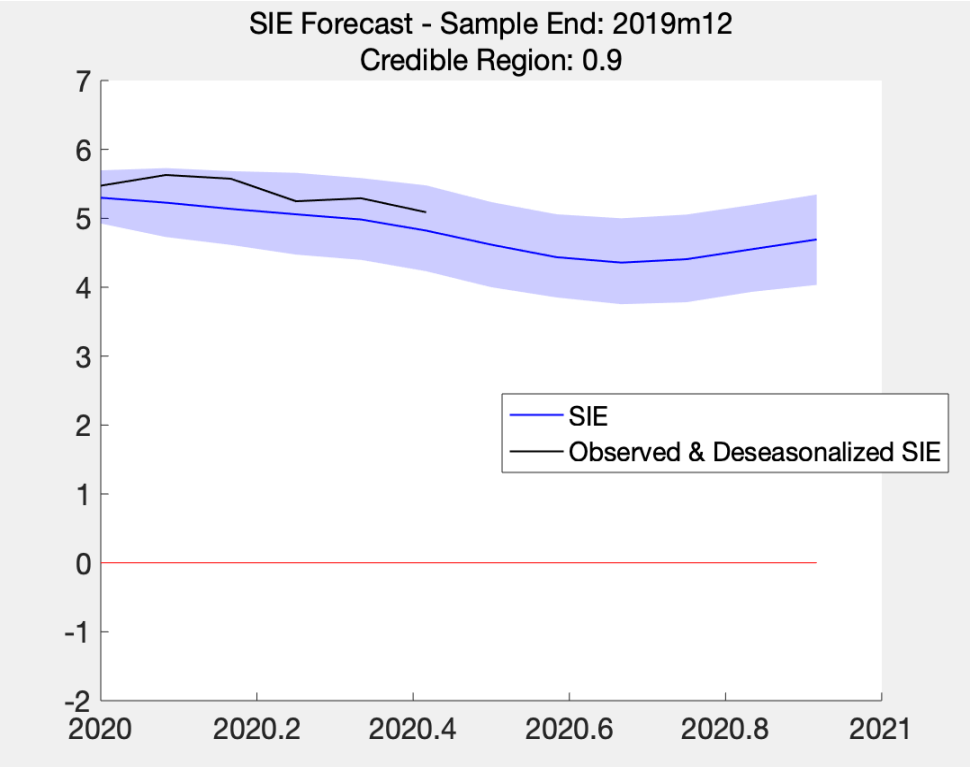
We use an 8-variable Bayesian Vector Autoregression (VAR) with 12 lags and a constant which we refer to as the VARCTIC. We estimate the model over the period from January 1980 until December 2019. The variables and their data-source can be found in our original paper. Due to the observable time-series data for *Thickness* ending in December 2019, we could not feed our model with any further observations from 2020, which would have allowed us to further enhance our forecast. That is, we forecast September 2020 starting from December 2019 using a 9-months ahead recursive forecast. Nevertheless, the model predicts well using a similar "long-shot" forecast for previous years, which motivates our contribution. An advantage of our model over other statistical models is that it emerges from the dynamic interactions and feedbacks of key variables – and the related transmission mechanisms can be explained. Hence, we consider it as a bridge between dynamic models and purely statistical forecasts that can prove harder to rationalize. For further details on the methodology, we refer the reader to our paper linked above.

In this brief document, we report figures for this current SIO as well as similar (ex-post) analysis for previous years. The graphs are for "synthetic September" as the data is de-seasonalized with dummies so that September is the base month. Overall, it is re-assuring to our 90% bands include realized SIE almost all the time.

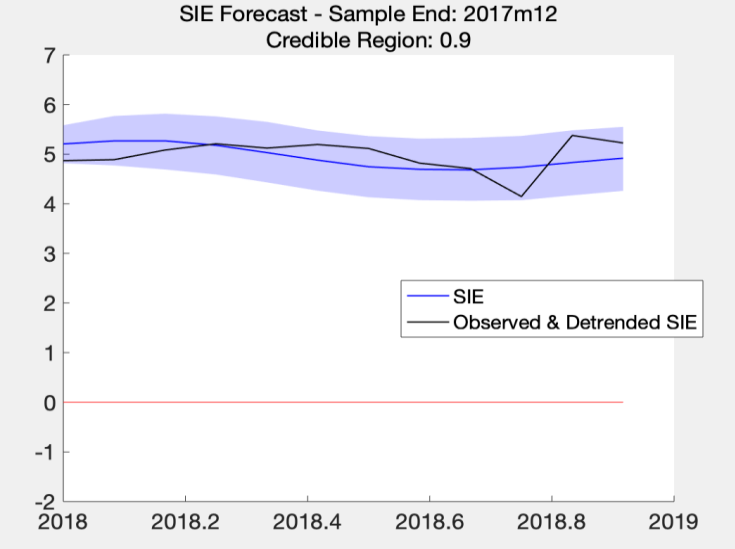
YEAR = 2020

At horizon=9 months, the median posterior draw (the official forecast) is 4.37. The 5% percentile is 3.76 and the 95% is 5.00.



YEAR = 2018

At horizon=9 months, the median posterior draw (the official forecast) is 4.71. The 5% percentile is 4.08 and the 95% is 5.31. The realized value was 4.71. Visually:



YEAR = 2019

At horizon=9 months, the median posterior draw (the official forecast) is 4.67. The 5% percentile is 4.04 and the 95% is 5.31. The realized value was 4.32. Visually: